

# LPO (H-60): sc-134848

## BACKGROUND

Lactoperoxidase is an antibacterial agent in cow milk. The heme protein lactoperoxidase (LPO), also referred to as salivary peroxidase (SPO), is an oxidoreductase secreted into milk. LPO, a 712 amino acid protein, belongs to the XPO subfamily of the peroxidase family. It is expressed in mammary and salivary glands and, in the presence of H<sub>2</sub>O<sub>2</sub>, LPO acts as a catalyst for the oxidation of many phenols and aromatic amines. It is crucial for protecting the lactating mammary gland and intestinal tract of newborn infants against microorganisms. LPO binds one calcium ion per heterodimer and one heme B (iron-protoporphyrin IX) group covalently per heterodimer. The LPO gene, which spans 28 kb, is similar in gene organization and sequence to the peroxidase genes MPO and EPX, suggesting the possibility that these genes evolved from a common ancestral gene. The LPO and MPO genes are arranged in a tail-to-tail manner on chromosome 17q22.

## REFERENCES

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2. Kiser, C., et al. 1996. Cloning and sequence analysis of the human salivary peroxidase-encoding cDNA. *Gene* 173: 261-264.
3. Ueda, T., et al. 1997. Molecular cloning and characterization of the chromosomal gene for human lactoperoxidase. *Eur. J. Biochem.* 243: 32-41.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 150205. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Ihalin, R., et al. 2005. Origin, structure, and biological activities of peroxidases in human saliva. *Arch. Biochem. Biophys.* 445: 261-268.
6. Nlend, M.C., et al. 2005. Role of sulfated tyrosines of thyroglobulin in thyroid hormonesynthesis. *Endocrinology* 146: 4834-4843.
7. Shin, K., et al. 2005. Effects of orally administered bovine lactoferrin and lactoperoxidase on influenza virus infection in mice. *J. Med. Microbiol.* 54: 717-723.
8. Le Nguyen, D.D., et al. 2005. Effect of the lactoperoxidase system against three major causal agents of disease in mangoes. *J. Food Prot.* 68: 1497-1500.
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## CHROMOSOMAL LOCATION

Genetic locus: LPO (human) mapping to 17q22; Lpo (mouse) mapping to 11 C.

## SOURCE

LPO (H-60) is a rabbit polyclonal antibody raised against amino acids 306-365 mapping within an internal region of LPO of human origin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

LPO (H-60) is recommended for detection of LPO of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

LPO (H-60) is also recommended for detection of LPO in additional species, including equine, canine and bovine.

Suitable for use as control antibody for LPO siRNA (h): sc-60962, LPO siRNA (m): sc-60963, LPO shRNA Plasmid (h): sc-60962-SH, LPO shRNA Plasmid (m): sc-60963-SH, LPO shRNA (h) Lentiviral Particles: sc-60962-V and LPO shRNA (m) Lentiviral Particles: sc-60963-V.

Molecular Weight of LPO: 78 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.